GEELONG NATURALIST

MONTHLY PUBLICATION OF THE GEELONG FIELD NATURALISTS CLUB INC

MUSEUM OF VICTORIA
10 FEB 1997
LIBRARY

Vol 32 No. 9
ISSN 0726-7363

FEBRUARY 1997

Museum of Victoria
40813

GEELONG NATURALIST

February 1997

Vol 32 No 9
ISSN 0726-7363

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FEBRUARY

4	General Meeting		Mike Traynor	"Working in the Museum's Natural History Section"
9	Bio-diversity Group	+	Excursion	Point Roadknight
11	Plant Group Meeting	*	Richard Mason	"Life in the Rainforest Canopy"
16	Excursion		Bay Cruise	Leaders: Graeme Tribe 552 302
25	Bird Group Meeting	*		
26	Bio-diversity Group		Workshop Meeting	"Show and Tell"

MARCH

4	General Meeting	Gary Backhouse	"Recovery of Eastern Barred Bandicoots in Victoria"
8,9.10	VFNCA Campout	Howman's Gap	Contact: Dick Southcombe 5243 3916
11	Plant Group Meeting	Study/Workshop	
16	Excursion		"Waders and Their Local Habitat" Leaders: Margaret Cameron 5229 9792 Marilyn Hewish
25	Bird Group Meeting	Pauline Reilly	"Birds of Painkalac Creek"
26	Bio-diversity Group	Workshop Meeting	

* CHANGES TO PROGRAM
\+ ADDITIONS TO PROGRAM

BIO-DIVERSITY NOTES
. . . Ade Foster

The January meeting was attended by just five members, who spent some time discussing meeting topics and excursions for the next couple of months. A review of the summer break revealed some interesting tales from Frank Scheelings who endured almost blizzard conditions atop Mt. Bogong in mid-January, and Bejanke Duim, whose trip to Erinundra was curtailed by an invasion of leeches.

Les Barrow reported on the last excursion, a joint function with the Victorian Entomological Society members to Kinglake National Park. Due to Christmas commitments, other members were unable to accompany Les and he and Jenny Drummond were left to represent the Bio-diversity group alone. Highlight of the trip was a peripatus, found by Jenny under a rock before the official excursion began.

Ade brought along a sample of the moths and spiders he had collected over the summer break from various sites, notably Grasstree Reserve, Inverleigh Common and Eagle Point near Paynesville. Frank Scheelings, as usual, had a number of interesting specimens, including a very large wolf spider *Lycosidae* and some harvestmen *Arachnids*, superficially like the common daddy longlegs spider.

Next meeting . . .
Our next meeting on February 26th at 8.00 pm is a Show and Tell, where members will bring along interesting specimens of any type to be examined, identified and discussed.

Next excursion . . .
The next Bio-diversity Group excursion is to Point Roadknight on Sunday, 9th February. Anyone interested should meet in the Point Roadknight carpark at the end of Eighth Avenue at 9.30 am.

□

VFNCA CAMPOUT AT HOWMANS GAP.
. . . Dick Southcombe

March 6-10, 1997.
Full accommodation (BYO bed linen and towel) is available from Thursday 6th (including evening meal) $135.00
OR
From Friday 7th (not including evening meal) $100.00.
. . . to lunch on Monday.

A number of half-day and full-day excursions / walks on the Bogong High Plains are scheduled for Saturday and Sunday.

Noel Schleiger will speak about the geology of the High Country on Friday evening and John Sinclair of Fraser Island fame will be the special speaker on Saturday.

For further information regarding the campout and transport thereto, about $60, please contact me on 5243 3916.

□

TONIGHT'S SPEAKER
. . . Mike Traynor of Anglesea.

Mike has worked at the Museum of Victoria for more than 30 years as a natural history preparator. He has gained extensive experience in the preparation of biological specimens for scientific study and display and we look forward to learning about Mike's work in this important specialised field.

The snipe . . .

Our very active reporter, Valda Dedman, advises that the snipe were still at Jerringot about a week ago.

She has seen groups of 1-3 under bushes closer to the bicycle path than the open water. They were there on the days of scorching heat as well as on the days of rain.

Was Valda also under the bushes on the days of extreme heat?

□

EXCURSION NOTICE
. . . Graeme Tribe

"Bay Cruise" Feb 16th, 1997.

Note: There have been changes since the advice in the December issue.

We will now cruise with the Friends of Coolart and the Field Naturalists Club of Victoria.

The boat will leave Sorrento at 10.00am for a six hour cruise to the same places we intended to visit from Queenscliff.

Our leader will be Ken Simpson (of Simpson and Day) who many of us have met in Geelong.

The cost is $12 per person.

Participants will have to board the vehicular ferry at Queenscliff at 9.00am to connect with our excursion boat.

Ferries leave Sorrento at 4.00,5.00, 6.00and 7.00pm to travel home.

Please send your money to:
Friends of Coolart
51 Tower Hill Road
Somers Vic 3927.

Numbers are limited to 100 people so please be quick.

□

PLANT GROUP MEETING

"Life in the Rainforest Canopy"
Richard Mason. Feb 11th.

Richard has been working with a research team in Queensland and is looking forward to telling us about this not-so-well-known subject whilst he is home in Geelong before commencing studies in Queensland.

Richard is grateful for the help the Plant Group - especially Winston Huggins - gave him last year with his assignment on local *Eucalyptus pauciflora* (Snow Gum).

□

FEBRUARY
. . .with Joe Hubbard

Summer Wetland Birds; Ladies Tresses and Hyacinth Orchids; Monkey Flower and Swampweed; Mistletoes; Birdcalls; Cuckoo-Shrikes.

Summer Wetlands:
The dry spring and summer we have experienced have led to receding water levels in many of our permanent wetlands and the rapid drying out of the ephemeral ponds.

A positive aspect of this (for some things!) is the creation of temporary mud flats with adjacent cover which make attractive feeding spots for waterbirds.

The Jerringot wetland on Belmont Common has such mudflats. Using these will be the more common waterbirds such as the Black-fronted Plover, a small black and white bird with a black chest band. In season they nest on dried out mudflats and their well camouflaged young lie "frozen" and almost invisible against the dried mud.

If you are a patient, still, quiet observer you might see two of our more shy and secretive Jerringot treasures.

The Baillon's Crake is tiny, brownish on top, greyish underneath with distinctive black and white bars underneath its tail. The Buff-banded Rail, about the size of a coot, has an obvious, almost orange chest band on its black and white barred chest.

Hospital Swamp, (Lake Rd off the Geelong-Barwon Heads Rd), is a place favoured by many of our diligent observers. It is rich in birdlife and can turn up such things as Glossy Ibis, Australian Bittern and Blue-winged Parrots.

With a dwindling water supply bush creatures are compelled to travel to the remaining waterholes, dams and creeks. This is a good time to allow them to come to you. A quiet sit by a waterhole can be a cooling and rewarding experience for you and the birds, and the lizards, and the dragon flies, and the .....

Plants which thrive in damp places such as the unusual but beautiful Austral Ladies Tresses Orchid will be struggling to produce flowers. This is an uncommon orchid, but if you do come across it, look for the many small pink and white flowers which spiral tightly around the flower stem.

Flowering now, and found in a wide range of habitats (open scrub to forests) is the Hyacinth Orchid. It is easily recognized by its sturdy spike of many pink flowers.

I wonder if the Creeping Monkey Flower will be hardy enough to flower. Look around the edges of Jerringot for its bright mauve monkey-faced flowers hugging the mud.

Another spot to look is beside a rundown often smelly pond at the Queens Park bridge car park. It grows with Swampweed which has small white to mauve fan shaped flowers.

There are always a duck or two here. Last visit we found six Grey Teals. For grace and refinement these get my vote.

Flowering here in January was a Creeping Mistletoe. Yes Valda, it has attractive, large, red and greenish flowers, but not quite as brilliant as the Harlequin Mistletoe which you could look for now.

Bird Calls:
Listen out for a Grey Butcher Bird. In spite of its name and table manners, it is a lovely songster. Simpson and Day have got it right- rich, melodious, piping. It is also into antiphonal singing (I'll have to find out what that means) at the beginning of its breeding season. In urban areas it likes open, woody areas such as golf courses.

When sitting outside on a delightful summer's evening, watching dragon flies hawk insects, and maybe looking at the world through an amber tinted glass, hear the ringing calls of Pied Currawongs as they fly to their roost.

During the day Lorikeets screech and "zit" as they flash from one flowering tree to another. You could be listening to one of Musk, Purple-crowned, Rainbow or Little Lorikeets.

Black-faced Cuckoo-shrikes:
Well worth looking out for, these 33cm grey, black-faced birds are sometimes seen undulating around town.

In December, near the beginning of the Limeburner's Bay walk, we found its cobweb nest with two nestlings on an almost horizontal forked branch of a gum.

Late summer and autumn these birds may flock to begin their wanderings until next breeding season.

And Also -

Rufous Night Herons
...at Buckley's Falls.
Dusky Woodswallows
...along the Barwon.
Double-banded Plovers
...returning from New Zealand - maybe still in breeding plumage.
Meadow Argus Butterflies
...on grasses.
Spine-tailed Swifts
...flocks.
Gang-gang Cockatoos
...after nuts and berries.
All sorts of waders.

□

CLEAN UP AUSTRALIA DAY.
. . . Dennis Greenwell

As has been the case for the last few years, the Club will be supporting the Clean-Up on 2nd March between 9a.m. and noon. (This is in addition to our on-going commitment to the Jerringot Reserve of course)

Will anyone who would like to help, please leave their name and telephone number on the front table at this evening's meeting, or contact me on the number below and I will let you have more details as they become available.

Tel. 5243 7047

□

LIBRARY NOTES
. . . Betty Moore

Habitat Oct '96 (ACF)

This is a special edition marking the 30th anniversary of the Australian Conservation Foundation. It covers ACF's history from small beginnings in the 60's, the brainchild of Francis Ratcliffe, then Assistant Chief of CSIRO's Entomology, and a distinguished contributor to wildlife research, through difficult and changing times to the present day and onwards. Outlines are given of projects and issues tackled over the three decades and make very interesting reading.

The Gang-Gang Cockatoo in Field and Aviary.

A literative review put out by the Victorian Ornithological Research Group. It covers years of observation and research into habitat, habits and population numbers of these birds.

New Book

"Name That Insect" by Dr Tim New.

A guide to the insects of South-eastern Australia. It is very clearly set out and illustrated; just what you need to identify that odd bug you found in the garden.

New Magazines.

"Waves" (Marine and Coastal Community Networks)

"Biolinks" Dept of ES&T.

Newsletters:
- Angair
- Sun-Nat (Mildura)
- Vic.FN News No.50
- Whirrakee (Bendigo)
- Latrobe Valley Naturalist
- Friends of Brisbane Ranges
- The SA Naturalist.

□

GRASS FROGS AND GREBES.
. . .Ade Foster

On 2/11/96 Dennis Greenwell, Les Barrow, Bejanke Duim and I visited two of the local wetlands for an afternoon's scoop-netting, and study of aquatic life we encountered. We stopped at Brown's Swamp for an hour or so than moved on to Lake Gherang. Two very interesting observations were made, quite apart from the aquatics.

As we pulled into Brown's Swamp the first things we noticed were the calls of the Growling Grass Frog, *Litoria raniformis*. True to their name the frogs were growling loudly from the weed beds about thirty metres from the shore. A brief scan with binoculars revealed eight or so sitting on top of the weeds in our immediate vicinity.

At Lake Gherang, we stopped on the road-side mid-way between two houses, about two hundred metres apart. The water level was high, and the lake's edge was only thirty metres from the road. A partly submerged fence, twenty metres or so further out showed that the water was only about 30 cms deep close in.

From where we stood, we could see six Hoary-headed Grebes, *Poliocephalus poliocephalus*, sitting on nests, in the small area between the houses and the fence. These nests would surely be vulnerable with just a small drop in water level, yet the grebes seemed to favour this area rather than the deeper water further out.

□

Geelong Bird Report 1995
. . . Barry Lingham

The third edition of this tremendously useful log of bird observations in the Geelong area has been published and is on sale for $4.00 from Ray Baverstock. Well done to Marilyn Hewish and Margaret Cameron for putting it all together.

As a bonus, this edition has profiles of Rohan Bugg and Valda Dedman, two of our most prolific recorders of birds in the area **and** a terrific article and bird list of the Iron Bark Basin put together by Anthony Mitchell, John Peter and Gordon McCarthy. It would be cheap at three times the price! □

CLUB NOTES
. . . Claire McCormick

I would like to wish everyone a happy and successful New Year and I hope you enjoyed the Summer break.

During this break, members of our Save Belmont Common Working Party and Valda Dedman in particular, have been tirelessly researching ways of approaching the struggle to preserve the Common in the face of the Geelong City Council's ready acceptance of the consultantants' report finding that the "Water Sports Complex" is feasible. We will have met with Council officers and Councillors this morning, who will, we hope explain what their next steps will be.

Our many concerns about this proposal are still to be addressed by the Council and we will be responding in writing. We are also having joint meetings with the Barwon Valley Golf Club Working Party and the Geelong Environment Council.

The next important item for your consideration is the election of Committee members and executive positions. I will not be standing for a further term and will also be away for three months from the middle of April (Queensland beckons). I understand that a couple of others may also be retiring. So, may I appeal to you to consider offering your help to keep our Club functioning in a healthy manner.

Quite a few members of the Committee have always given enormously generous amounts of their time over the years and I am sure that they will continue to do so in the future, however, it is only fair that the rest of us have a go and lend them a hand.

This is your Club,

let's keep it strong.

□

BIRD GROUP REPORT
. . . Barry Lingham

January 28th 1997

Our speaker for this meeting was supposed to be Roger Hicks who was to speak about the birds of Chile, but Roger and his wife were stranded in Malleluca in Tasmania due to severe weather that did not even allow them to radio out. Hopefully we will be able to hear Roger's talk in the future.

There were fewer members present than usual, as many had not returned from the Mt Buffalo campout, but we still had a very enjoyable evening. As there was no speaker, we had time to discuss in detail all the observations people had made over the summer. (see the observation reports)

After the observations, we viewed a selection of slides from the late Eric Bound's collection in the club library. Eric was a keen photographer who travelled widely throughout Australia. After his death, Gordon McCarthy made a selection of slides to be donated to the GFNC from the thousands in Eric's collection. They are available for loan to Club members.

The slides we viewed ranged from local birds to birds of the tropics. Some magnificent views of many species were shown but the shot that I particularly enjoyed was of a Rufous Fantail at its nest on a tree fern frond. Many of the shots must have taken incredible patience waiting for the birds to be just in the right position.

Thanks to Craig Morley for quickly choosing the slides and giving guidance about what each species was and other interesting information about the birds.

It was a truly relaxing social evening, with everyone contributing their own anecdotes about the species we viewed. The general comments were that we should have this type of evening more often!

□

VICTORIAN WADER STUDY GROUP NEWS
. . . Clive Minton

Mist-netting of Japanese Snipe was resumed in mid-September with 3 caught at Braeside on the 11th and 47 at Belmont Common at Geelong on 14-15th. The latter contained four birds banded there last season. Most birds were obviously newly arrived and only just commencing their wing moult. However, a few birds were well advanced in their primary moult. This presents a bit of a conundrum. Either they had already been in Australia for many weeks, or they had migrated whilst partway through their annual wing moult - neither of these situations would be expected.

It is hoped that repeat visits to Belmont this summer will give an indication of turnover in the population and hence the total numbers of individuals using this site (as opposed to the maximum number present at any one time). This is particularly important to determine in order to further strengthen the conservation case - the site is presently under threat from developments associated with the creation of a new artificial rowing course.

In September it was clear that passage migrants were using the area as several birds were well above the normal weight range. Tasmania, a Japanese Snipe stronghold was possibly their destination.

Note: Reprinted in part, with the author's permission, from *Babbler* No. 41, Dec 1996.

□

MARCH MEETING

Recovery of Eastern Barred Bandicoot - Gary Backhouse.

Gary is a senior policy officer with DNR&E where he works on a range of endangered wildlife projects. The Eastern Barred Bandicoot is one of Victoria's most endangered mammals which declined to the point of extinction in the wild some ten years ago.

Gary will describe the intensive recovery program and future prospects of these delightful creatures which we saw at Hamilton with Rod Bird during our October 1987 campout. They were being preyed upon by pet cats at that stage.

□

SUBSCRIPTIONS
. . . Alban Lloyd-Jones
Membership Officer.

Sorry to mention the dreaded "S" word but I would like to remind the following members that they are already financial until **April 1998.**

Edith Coats
Geoff Drinnan
Helen Jordan
Joan Lindross
Graeme Stockton.

Helen Jordan joined the club as a result of a retirement gift from her good friend (and a member of 14 years) Mrs Lorraine Secen.

A kind thought Lorraine.

□

DISPLAY FLIGHT OF THE JAPANESE SNIPE *Gallinago hardwickii* IN THE NON-BREEDING GROUNDS

Appleby, C. 95 Broadway, Camberwell East, Victoria 3124 Australia

INTRODUCTION

Japanese Snipe *Gallinago hardwickii* in Australia use various types of flight in different circumstances. The most common is the sudden eruption from marsh vegetation, often almost at the observers feet, with a rapid low-trajectory straight-line flight to a new source of cover. The bird usually drops into the cover, again assuming invisibility. It may give a short warning call, which other snipe may heed, prompting similar flight responses.

Should the birds be flushed a second time, calling is more urgent and is taken up by more birds. The initial trajectory is higher than that of the first type of flight, often with the birds forming a loose flock and spiralling rapidly upwards, with many sudden changes of direction as they leave the area. This type of flight is known as jinking, it has also been described as zigzag flight (Johnsgard 1981). A third type of flight, drumming, which is rarely seen in Australia, is usually associated with the reproductive cycle.

OBSERVATION

Some years ago, in mid-October, on Belmont Common, Geelong, Victoria (Australia), the author chanced upon two birds displaying the drumming flight. The observation was made on a deeply overcast day after several days of heavy rain. Fourteen Japanese Snipe were feeding on the verges of the bicycle path and a shallow reedy pond at the edge of the golf course. Two snipe were particularly active, jumping about and chasing one another. They had interrupted their feeding several times when one bird leapt vertically about two metres, returning to the ground almost at its take-off point. The other bird did likewise, then rose almost vertically to a height of about five metres, partly closed its wings and with tail spread plunged earthwards. It alighted beside the bird which had first leapt, and which showed no interest in the aerial display which was repeated once. The sound produced by the diving snipe was more like the riffling of a phone book than drumming.

Both birds resumed foraging in the open at the edge of the pond. The other snipe in the group apparently ignored the whole incident and no birds called during the event. The plumage of the protagonists seemed brighter than that of the rest of the group, with more contrast between light and dark areas. No size difference was apparent, nor was any difference in bill length.

DISCUSSION

Three sequential phases of aerial display have been described by Naarding (1985) viz: Stationary, the bird calling from a prominent fixed perch; followed by circling with rapid steep ascent to about 60-100m above ground, then flying and gliding in wide circles while calling. The third phase is the diving display, a steep ascent followed by a dive from height with the tail lifted and fanned, and wings held close to the body, the bird pulling out of the dive some 15-30m from the ground. The bird may circle or perch after this.

The flight seen at Geelong seems to be a much shortened variant of the circling-diving elements, with the added complication of a second bird whose behaviour may have prompted the flight.

Driscoll (1993) notes that tripartite display occurs during migration too, and for the first few weeks on the breeding grounds, and thus is probably restricted to the males. It also occurs at times of low light intensity, afternoon, evening, night, and early morning. Perhaps the extremely dull light triggered the behaviour in this case.

The function of the full display is unknown. There is no overt aggression between displaying birds, so that it may be a courtship or pair-formation display. It may be a territorial marker (when aggression might be shown), or it could be a deterrent to predators, drawing attention to the aerial and away from the nest.

In the case described, the initial chasing and short leaping suggested play, which when the higher flight occurred, took on the more serious intent of establishing a higher ranking for that individual within the group.

It was a stroke of luck that this behaviour, although in a much truncated form, was observed in Australia. Other observers are encouraged to publish observations of breeding behaviours from the non-breeding grounds.

REFERENCES

Driscoll, P.V. 1993. Summary of Banding Data and a Literature Review for Five Species of Migratory Bird. ANPWS and RAOU, Unpub. Report.

Johnsgard, P.A. 1981. The Plovers, Sandpipers and Snipes of the World. Univ. Nebraska, Linc. and London.

Naarding, J.A. 1985. Latham's Snipe Gallinago hardwickii in Australia and Japan. Tas. N. Wildl. Div. Tech. Rep. No.2.

Note: Reprinted, with the author's permission, from *Stilt* No. 28, April 1996.

□

A LIFESAVER

With the printing of this issue only hours away, the Bird Report which is **always** one full page arrived, but it was two columns short due to the speaker being unable to attend. Worse, I had used up all of my little "fillers".

Fortunately, the ever-helpful Valda Dedman had given me two ideas for future issues and so a few frantic telephone calls enabled me to use them. The articles are by Claire Appleby and Clive Minton and with the snipe still at Jerringot, they are topical.

Thank you once again, Valda.

In speaking to Claire Appleby, she explained that the day of this sighting had started out as a visit to Barwon Heads, however the weather was very bad so she left and went home through Belmont, calling in at Jerringot on the way. She certainly made the best of a bad day.

Clive Minton made it very clear that he was happy to do anything which would make people more aware of this asset ehich could be diminished by developers.

□

COME AND DINE AT JERRINGOT

. . . by Louis N Lane

M E N U

ENTREES: *6 varieties of shell-fish - poached on the shell or au naturel*
2 varieties of crustaceans - cooked to order

EGG-DISHES: *many varieties of eggs - raw for the gourmet or coddled or hard-baked*

FISH: *3 varieties of river fish - lightly cooked on a green griddle*
3 varieties of marine fish - baked or foil wrapped

MEAT: *3 varieties of red meat - roasted or pressure-cooked grilled or en casserole*

ACCOMPANIMENTS: *3 varieties of salad greens*
5 varieties of hot, roast veg. and
something quite new - hot salad steamed on the hob

POULTRY: *10 varieties - grilled over coals.....or*
cooked-in-a-parcel; this is our menu speciality

ACCOMPANIMENTS: *3 varieties of salads (as above) plus fresh picked mushrooms*

AFTERS: *(for the connoiseurs or the toothless, infants & aged)*
12 varieties of exotic proteins on ground grist scones
4 varieties of seeds used for scone loaves

DRINKS: choice of three - Aqua more or less pura fetched from the river in a coolamon
wattle-gum dissolved in water and sweetened with nectar from spring flowers
nectar-water fermented in a tarnook
(strictly only for men about to perform a ritual drama)
oooooooooooooooooooooo

Please note: Diners must be prepared to take pot-luck.

Variety in the menu for those who camped at Jerringot:-

CRUSTACEANS . . (2 varieties)
EGGS. . (Many Varieties)
EXOTIC FOODSTUFFS. . (9 Varieties)
FISH. . See:- Marine fish and River fish
FLOCK BIRDS. . see:- Poultry
FUNGI. . See:- Mushrooms in Exotics.

LEAFY VEGETABLES. . See:- Salad stuff
MARINE FISH. . (3 Varieties)
POULTRY. . (10 Varieties)
RED MEAT. . (5 Varieties)
RIVER FISH. . (3 Varieties)
ROOT VEGETABLES. . (5 Varieties)

SALAD STUFFS. . (3 Varieties)
SEED LOAVES. . (4 Varieties)
SHELL-FISH. . (6 Varieties)
TENDRILS. . Only one sort served.
WATER-BIRDS. . See:- Poultry
WATTLE GUM. . (The best grade mucilage for nourishing beverages)

There is no doubt whatever that the Aborigines, living in their pristine environment, especially in this favourable countryside, had a much greater variety of foodstuffs from which to choose than the poorer classes in Great Britain after the Industrial Revolution.

Aboriginal foods were fresh and unpolluted; their environment was clean.

Low alcohol soma was prepared for males who were about to exert themselves in dance-dramas; but this was never consumed on a day-to-day basis. This aspect may be contrasted to Aboriginal health advantage with the fact that liquor was freely available in the great cities of England, where many children got a taste for gin with their mother's milk.

Consider the great assortment of flavours and food-values available:-

1 sort of nutating tendril: Dodder-laurel.
2 sorts of crustaceans: Crabs (marine) and fresh water lobsters.
2 sorts of river fish: Black-fish and eels.
3 sorts of marine fish: Flounder, mullet and stingray.
3 sorts of beverages:
Water, preferably from a running stream.
Wattle gum dissolved in water and sweetened with nectar.
Nectar solute or sap solute, fermented in wood - the soma strictly for men.
4 sorts of salad greens: Bracken shoots, sow-thistles, lignum buds and the medulla of tree ferns.
4 sorts of grist: Gum seeds, wattle seeds, grain from grasses, seed from pulses. These could all be harvested and stored when ripe.

They were usually ground with insect derivatives like ant eggs before being baked on a stone. This added shortening to the dough and enhanced the flavour.

5 sorts of meat: Water rat, possum, wallaby, dingo and kangaroo.
5 sorts of root vegetables: Bracken roots, yam-daisies, corms of rushes, bulbs of lilies, rhizomes of orchids.
5 sorts of fresh salad stuffs: (as above) plus fungi.
6 sorts of shell-fish: Cockles, mussels,oysters, limpets and sand- and rock-whelks.
9 sorts of exotic foods: Larvae, pupae, nymphs, mushrooms, sea-urchin's gonads, quail-crops full of manna, reptile eggs, serpents and tortoises.
10 sorts of poultry: Duck, swan, geese, spoonbill, ibis and snipe, pigeon, galah, quail, turkey and emu.

Many sorts of eggs in all stages of development. Addled or shells containing embryo were appreciated.

This is a conservative list. In good seasons, foragers chose the foods that were preferred; hunters selected the best prey available. In drought seasons they were sometimes obliged to take whatever was available.

In poor seasons, the strategy was for the clan to separate into families, each man taking his wife (or wives) and their children. These small groups did not camp long in one place. They could usually find ample water and food while they waited for better conditions to eventuate, when they congregated again for communal hunting and gathering.

AN HISTORICAL GLIMPSE OF THE EFFECTS OF BEING DEPRIVED

**DAN:DAN:NOOK (King-parrot Boy) belonged to the BENGALI clan of the WATHAURUNG tribe.
**WILLEM:BAANI:IP (Home Bunyip) was born into the WUDTHAURUNG clan.

It is very likely that they would have met at Jerringot, for the arrival of the migratory snipe which were expected to come jinking in (October or November depending on the full moon).

One of the last traditional recorded sightings of the aboriginal Kings - Jerry and Billy, was collected by Dennis O'Halloran, whose home, "Springfield" was built near BANGI:BALLA (Reedy Lake) at an ancient living station called LIB:LIB. His father saw them shortly before the death of DAN:DAN:NOOK, at LIB:LIB and he noticed that the two Aboriginal men were cooking a magpie.

By that date, they had been thoroughly de-tribalised and tamed.

Officially, they were supposed to live on the Duneed Aboriginal Reserve at Waurn Ponds, but they used to travel to Geelong daily to beg. They must have been very hungry, indeed, to have made the effort to trap a magpie to eat. This bird did not afford a favourite meal. They would have preferred a bronzewing pigeon or, better still, some mutton. But they would not have dared to steal a sheep and had not, apparently, been able to beg a meal from the proprietor or the customers of the "Help me through the World" Tavern, nearby, on the old

coach road to Portarlington. Had they been offered a coin, they probably would have purchased some liquor so they could drown their sorrows.

These two survivors had seen their people perish; they had suffered by being deprived of the hunting territory that had belonged to their tribe for thousands of years.

They had been reduced to beggary.

What the people ate while camped at Jerringot in the cold season; how they obtained the food; how they prepared the meals; what by-products came from these provisions:

ACACIAS (*Gherinehap,* the golden wattle and *Moeyang,* blackwood) provided not only seeds but gums for human consumption or for manufacturing hafting-mastic. See also:- Dry seeds.

BLACKFISH (See:- Scale-fish).

BRACKEN-FERN (*Moolah).* Fern "curlies" - the shoots were eaten in the crosier stage. Bracken-fern was often the first green food to recover after bushfire. The rhizomes were baked in the earth oven with the meat. Some were slow parched in the sun to be carried as iron-rations by a *bihar* being sent with a tribal message into a far territory.

BUSTARD See:- PlainsTurkey.

COCKLES (from Corio Bay) spread on hot ashes and sand until the valves opened. This sea-food was eaten poached.

CRABS (from the bay) Lightly cooked in ashes and embers. Heavy claws discarded, bodies crunched up carapaces and all.

DAISY-YAMS (*Murnong or Mirrn:ong).* This was a common vegetable crop in southern Victoria, excavated all the year round except in deep winter when the roots were bitter.

This staple food was baked in the main oven with the meat. Aborigines were diet wise enough to be well aware of the necessity to consume a balanced diet of both protein and carbohydrate foods.

DINGO PUPS (*Yearagin)* Taken before they ventured from the dens, a constellation reminded the hunters when the dingo-bitches were reproducing. To obtain this favoured meat food, the men residing at Jerringot would have been obliged to claim hunting rights with the *Worinyaloke* clan whose territory lay around the You Yangs; or with the *Tolloora* clan whose domain north of the Barwon, between the Leigh and the Moorabool Rivers, included Dog Rocks.

If captured young, the flesh (milk fed) was succulent, being rich in fat.

William Buckley testified that adult dogs were also on the menu.

DUCKS (each variety had a specific tribal name). See:- Water-fowl.

DRY SEEDS of ferns, wattles and grasses added nourishment to the diet, for seeds, like eggs are a whole food, containing all the nutriment necessary for life.

The southern tribes of Victoria did not have a seed-milling economy because there were a great variety of green foods for the foragers to choose from. However, wattle seeds, in particular, were gathered from around ant-hills and saved for that rainy day; the time when it was too inclement to forage successfully. See also:- Gum seeds.

EELS (*Babbanian, Boonea, Koonan, Mordong).* Each name was applied to a species of eel or eels in different stages of their natural lives. Adults making their way downstream, towards the sea in the mysterious depths of which they would spawn, were captured in stone mazes on the margins of the migration route.

Grilled over coals they were oily and mucilaginous. Elvers *(Mordong)* beating their way upstream from the spawning ground were captured in woven baskets where they wriggled in shallow water up the rapids (e.g. Buckley's Falls). They were not nearly so tasty as mature eels, but a basketful cooked in a bark parcel was a nutritious addition to any meal.

EGGS (*Min:Yong).* Eggs from every variety of bird which nested in the vicinity of Jerringot in early spring: eggs from any size or shape of nest were robbed, not forgetting the stringent food law re. leaving one or two to ensure the survival of the next generation. This regulation made every aborigine a conservationist.

Men preferred an egg to be addled, especially if the embryo was well developed.

A drop of egg-yolk was frequently the first food, except for mother's milk, which was administered to an infant.

Bright-eyed children soon developed the capacity for spotting bird's nests when out foraging. (If mother saw them first, the eggs went into her carry-all for the family supper).

Usually consumed raw, large eggs - swan, goose, turkey and emu eggs were punctured at the air-bubble end with a drill and set, narrow-end down, on the margin of the cooking hearth until the albumen set.

EMU (*Kar:wear).* Hunters slathered their torsos with clay as a deodorant before stalking these creatures with patience and cunning or waylaying them from a hide.

The plumes were utilised for creating tutus for females or head-dress panaches for males.

Sinews were extracted from an emu's foot before the leg was placed in the bottom of the pit oven to roast.

The bird was gutted, also, for the inner organs were gourmet fare when tenderly toasted near a fire.

The carcase was swathed in unwanted feathers and leafy twigs to stop the skin from scorching. The torso was placed, breast-side down on the previously heated stones which lined the pit.

The head was drawn forward over the end of the trough, then a sheet of bark or a lid of damp clay was placed over the meat, leaving the head uncovered.

How did the chef know when the poultry was cooked? When steam issued from the beak, it was deemed to be done.

FLOCK BIRDS like Galah, Bronzewing Pigeons and Quail were brought down while feeding under trees with Boomerang or Missile-stick.

Decorative feathers were requisitioned for ceremonial regalia. Small carcases were seared to remove the feathers and wrapped in paperbark to prevent the body juices escaping. The parcels were laid in an earth oven with larger game.

FLOUNDERS were speared in the shallows of Corio Bay by a fisherman on foot, grilled over a bank of glowing coals on a grid of green twigs eye side down and flipped over once.

FRESH-WATER MUSSELS (*Chaloop*). See:- Mussels.

GEESE The black and white magpie geese used to frequent the swamps and billabongs in this area as well as the grey Cape Barron goose. Alas, they are extinct in Geelong and district. They were no match for the invader's guns together with the foxes imported with them. See:- Water-fowl.

GRAIN The seeds of various native grasses were harvested in autumn and stored in tightly woven baskets coated with clay to render them water-proof. See also:- Grist.

GRIST Seeds were ground to grist on a mortar after being crushed on the hollow surface with a hammer-stone. The meal could be devoured at once or made into a scone loaf by adding water and/or the pulp of insect pupae. The scone was then baked by setting the nether stone on hot sand and ashes.

GUM-SEEDS The seeds of each variety of eucalypt had a specific name. Gum seeds tended to be bitter and were not enjoyed nearly as well as wattle seeds. Be that as it may, a provident mother always accumulated some if the occasion offered. Ground with ant eggs, they provided nourishment on some rainy day in winter.

KANGAROO *(Koimo)* Hunted on the plateau west of Jerringot living mound or on the basalt plains along Waurn Ponds Creek.

The hunter who speared the game received the plaudits of his clan.

He was allowed, however, only one item of offal meat from his prize for his own family. The rest of the carcase was divided by somebody else, ritually, among various members of the clan.

The strict welfare law was a survival technique. The custom ensured that the able hunters provided for all the people. The less able all benefited from his skill. He got the kudos; they got the protein.

Strong sinew was removed from the hind legs and wound onto a rod to be used for haft-binding, a tool making technique which improved on the hand held tools of ancient ancestors.

If a cloak was needed, the animal might be stripped of its skin, but it was common for the fur to be singed off over live flames, the heat hardened skin forming a leathern "casserole" in which the meat was broiled.

The inner organs were removed for they were gourmet fare needing less cooking than the muscle meat. This process also permitted the body cavity to be stuffed with hot cobbles. Thus prepared, the carcase was lowered onto a layer of wet leaves steaming on hot stones. More leaves were placed over the meat to mask it from scorching. The oven was lidded with clay through which, from time to time, holes were pierced so that water could be introduced to get a pressure-cooker effect. A fire was kindled on top.

Cooked portions were doled out into rush baskets or bark platters brought to the main fire-side by women, each family receiving a specified division of the roast.

A mother allotted a kangaroo tail would divide it into portions among her dependents. This bone-lined serving was tasty and rich in gelatine. The tip of the tail was crushed on a mortar and mixed with grist to make patty-cakes suitable for the toddlers.

Truly, the day *Kioma* was slain was a day for general rejoicing. Along with the food the foragers had collected there would be a banquet.

In the latter stage of tool making, when bone working was the fashion, the forearms of the kangaroo were removed at the elbow-joint before the body was consigned to the oven. The bones were required for gouges and awls. The muscle meat was scraped from the bones and cooked *Yudarn Tookoo* (in a bark parcel) for the shank must be carved while fresh, with a stone chisel. The bone process (the knob) made a convenient handle.

I wonder, was the remainder cast to the camp dingoes or was it cooked in ashes and presented to some small, human urchin?

MULLET which are still resident in the bay were caught in trawl nets when they ran in shoals over the shallows at low tide. The diving of the great gannets or a hovering of sea-gulls alerted the humans to the presence of the shoal.

The fish was gutted, split and grilled, scale side down on a griddle of green twigs laid over a bank of coals raked from the home hearth fire.

MUSSELS The freshwater variety *(Chaloop)* were to be found in every stream and swamp in Geelong and the district. Wedged hinge side down in ashes on the margin of the hearth, they were eaten lightly poached.

The shells were sharpened at the edge and served as knives: e.g. for cutting hair. It is to be inferred that they were also used as spoons for when these items belonging to the white invader were seen, they were called "*Woo:roo:nee:Chaloop*" which meant "the lip of a mussel".

In Corio Bay, marine mussels were sometimes found clinging to rock-clusters. These were cooked the same way after being detached from the stones with a pick.

OYSTERS *(Koo:N:Warre)* Two thousand (2,000) years ago, Lake Connewarre was deep enough to support oysters and arks. Ancient aborigines created a mound of their shells on a tiny, off-shore island in the lake. While mud-oysters are still washed ashore on Point Henry from the deeps of outer harbour, there is no evidence that they were ever eaten at Jerringot, except for the presence of an "oyster-pick" fashioned from a quartz-pebble. Oysters were opened with a similar, pointed implement and were devoured without cooking.

The author speculates that 'oysters naturel" were occasionally eaten at Jerringot

PLAINS TURKEYS (Darriwill) As the name implies, these large birds were to be found on the plateau and plains to the west of Jerringot camp. The birds were relatively easy to acquire for they were cursed with a curious nature. The hunter crouched in deep grasses, waving a tuft of grass or a loop of string on the end of a lance. This lured the inquisitive bird within striking distance of a missile stick. The sticky-beak was out of luck when a *Wathaurung* hunter had stalked it.

The feather bib was removed, skin and all. With some pinion and tail feathers, it was required for personal decor. The feet, shins and wing-tips were fed to the camp scavengers. Cleft from wishbone to spine and opened out like a butterfly pork cut, *Darriwill* provided a sumptuous meal for a family, well worth the hunter's effort.

POLYGNUM BUSHES produced edible buds in early spring. These were eaten as a snack by foragers out on food gathering duties. Shoots are full of good nutriments, as modern dietitians aver.

POSSUMS (Walert or *Wollard)* Arguably the most valuable creature for the tribes people of this district. Twitched from the nests in the hollows of venerable River Red Gums by twisting a thin wand into its woolly fur, the creature was usually skinned to provide fur squares for stitching together with emu or kangaroo sinew to create mantles or rugs.

The bare carcase was then carefully grilled on coals and turned over frequently to prevent the meat from parching.

Sometimes the animal was plucked. Its fur, blended with grass or bark fibre or human hair, produced the very best string, strong yet resilient.
Hunting possums (or gliders or native-cats) was done by both males and females of the group. Their pelts provided what was, virtually, the only clothing worn by the indigenes.

Differences in the colours of these squares were appreciated, as were the varied tails which were chosen as personal ornaments donned for special occasions.

Wollards were often available when *Koimos* were scarce. They constituted a never ending source of meat food and raw material for the people. Their lower mandible, with incisor intact, was used as a burin for carving wooden tools.

REEDS AND RUSHES which lined waterways provided habitat for water-fowl.

The plants, themselves, produced corms which were dug, pounded (much in the way we hammer steak to make it tender) then baked in hot ashes. This food was rich in starchy matter, very good for growing children. Fibre from bulrush corms, gathered in a bark container and combed with a *chaloop* was excellent for making durable twine.

Leaves, parched, then reconstituted by being soaked in running water, were required for basket weaving.

The fluff from a bulrush spike was used to smother bleeding in a deep wound.

SCALE-FISH from fresh or salt water had tender flesh which did not require much cooking. Gutted and split at the spine, the flesh was grilled, scale side down and served on a bark platter.

The internal organs were often cut up and drippings (oil) were collected for dressing wooden handles or the skin side of fur cloaks, mixed with ochre, to make the wood more durable and the cloaks waterproof.

SEA-FOOD Residents of Jerringot living mounds were well within foraging distance of Corio Bay, the western shore of which lay within *Wudthaurung* clan territory.

Scale-fish and shell-fish were both available in quantity, if they desired a change from meat food.

Edible seaweeds, like sea lettuce or laver, went into the *dhilli* to be eaten raw. Laver was also used, when heated near the fire, to be applied to skin lesions as a false skin.

SEA-URCHINS were also available in the bay. The gonads were chewed and swallowed without cooking.

SHELL-FISH Various species of bi-valves - cockles and pipis, and univalves - whelks, top-shells, ear-shells and limpets were to be found in Corio Bay as well as marine mussels. These, like fresh-water mussels, all contributed good protein to the diet of those who had access to salt water. They were usually poached in hot sand. A diligent mother could feed her family well after a morning at the beach.

She was frequently obliged to sustain her husband as well; for the males were often intent on religious observances and had no time to hunt.

SNIPE at full moon, late October or early November, the snipe returned annually from the northern hemisphere, in such vast flocks that they could be heard approaching. Their arrival was awaited in expectation that the super abundance of protein food would permit them to invite their neighbours, the *Bengalil* horde from the Bellarine peninsula and the *Gerarlture* horde from the land about Lake Modewarre to share the glut. When the clans had assembled, each building a *Wurrn* (cluster of shelters), the hunters would make a concerted effort to trap or slay the snipe. Foragers would go out together to gather the accompaniments in the form of available vegetable foods. The children made friends with the visiting urchins.

After sundown, the people would cluster round common fires to socialise, to dance and sing and feast together. The clan would trade goods from their own domains or new songs from their repertoires.

A *Corroboree* was a time of jollity, yet with a serious purpose. No clan lived in isolation.

After the departure of the visitors, the folk from Jerringot would be obliged to migrate. The great congregation of people had set a strain on the supplies of vegetable foods in the locality. They would pack all their belongings in their *Dhilli* (carry-alls) and depart before supplies were exhausted. That was the law. They would make their way, perhaps, towards Bass Strait to camp in some snug position well behind the dunes. Summer was coming!

The "Place of Billabongs" must have been a prolific source of supply; the annual return of the snipe, an event much anticipated.

STING-RAYS The rhythms of the tides were intimately understood by the aborigines. Hunters would take special dusk-of-morning excursions, at low tide, to harpoon the sting-rays in the beach shallows of Stingaree Bay before the light of the rising sun caused them to retreat into the seaweeds in deeper water.

The sting was valued to mount in a reed-haft as a spear point. The fish was grilled directly on hot coals, then the white flesh was scraped from the tough integument. Balls of this food were re-cooked, slowly, in ashes of the cooking hearth.

SWAN (*Koon:Warr)* The black and white primary quills and the rose red mandibles were both required for personal decor. See:- Water-fowl for cooking method.

TADPOLES caught in dip nets were poached on a thick layer of green grass laid over coals causing steam to keep the morsels from parching and shrinking. The food was enjoyed, at this stage, almost as much as mature frogs (*Kong-Kang)* which, being bulkier, were cooked in bark, *Yudarn Tookoo.*

TENCH was a fresh water fish which could be caught in the Barwon. Men sometimes speared them from shallows during the day or, more often from a bark float at night. The womenfolk used hooks and lines.

TORTOISES set on the carapace in hot sand and ashes, embers and ashes were then piled on the plastron. If a man caught a tortoise, he would make a journey to present it to his fiancee's mother as a duty gift. Tortoise flesh was highly regarded, besides which the carapace made a handy small basin for storing fat.

TREE-FERNS AND GRASS-TREES The medulla of a tree-fern could be eaten raw. Its curly shoots were administered as a purgative for anyone with stomach trouble.

It was a custom to break off the top of the spike of a grass-tree so that predatory insects could lay their eggs in the pith of the flower stem. The larvae of the fly, maggot like creatures, were enjoyed au naturel.

WADING BIRDS like spoonbills or ibis, were speared or trapped for food. Their decorative feathers were appreciated. Their main value to the hunters were their long leg bones. From these were made the polished spikes to arm harpoons.

The fowls were gutted to reserve the inner organs for toasting after discarding the gall bladder. Clefts from breast bone to spine, the carcase was spread flat on coals to singe and seal in the body juices. When they were turned over, the feathers charred, forming a mask to prevent the skin from scorching.

WALLABIES (*Warrabi)* were often skinned and the pelt turned inside out to make a water-bag. the orifices in the skin were tied off with sinews. The fur inside the bag filtered silt from the water. The bag, stuffed full of leaves from a red ironbark tree, was hung up to tan. The kino stained it pink and rendered it waterproof.

The wallaby carcase was dismembered and laid on hot stones in the bottom of a pit, covered with a clay lid onto which coals from the cooking fire were raked.

If no water-bag was desired, *Warrabil* was cooked a la *Koimo.*

WATER-FOWL ducks, geese and swan were gutted, stuffed with hot pebbles and, after being wrapped in water weeds or inner bark were placed in an earthen pit for slow baking.

Alternatively, after being divested of any distinctive feathers which could be used by humans for personal ornaments, they were covered in clay slurry and baked on coals. The feathers were removed at the same time as the clay "casserole".

Different items of giblet-meat were toasted over live flame or buried in ashes, according to the relative toughness of the organs.

WATER RATS. Though these were creatures of the night i.e. nocturnal in habit, they were well known for they were frequently caught in eel traps. Their thick fur was appreciated and their white-tipped tails were desired for decorating fur capes. A set of water rat tails could become an item of trade exchange at *Corroboree*.

WATER-RIBBONS can be seen growing in most cut-off meanders. The deep, strong roots produce an abundance of white, satellite bulblets round every plant. These were eagerly sought in early spring.

WATTLE SEEDS were ground with a muller on a nether stone with ant pupae to make a kind of porridge. It could be consumed at once in the semi-liquid state, or shaped into a scone loaf to be baked on a stone griddle. Wattle gum provided mucilage, a fine food for children. A beverage concocted especially for the young was wattle gum stirred into water with nectar added as a sweetener.

Wattle-bark was bound over wounds, both as a splint and as a medicament. The tannin in the cortex of acacias was an effective disinfectant.

WHELKS were cooked in ashes. The diner crushed the protoconch with a pick, then sucked the flesh from the end where the operculum had been removed.

WHITING. Aborigines, superstitiously afraid of the dark would probably only venture to Corio Bay from their home at Jerringot at the time of full moon. Whiting was captured in purse-nets when they rose to investigate lights in the surface of the water after sundown.

One fisher carried a torch made from wattle bark smeared with fat. The other manipulated the net. I wonder did they enjoy a barbecue on the beach, or were the whiting carried home for breakfast?

WOOD GRUBS (the larvae of cossid moths) which lived under the bark of the River Redgums were sometimes eaten raw and wriggling. Those hunting for this rich food were reputed to be able to hear them boring their way towards the surface of the bark.

Wood grubs were a staple source of protein during the colder months of the year. To provide a gourmet dish, the fat creatures were shaken in a coolamon with some cinders. This slight toasting made the food edible by all from infants to the aged.

YABBIES (*Yabbi)* were caught with a bit of gristle tied on a string. During spring downpour, yabbies were often flooded from their burrows and could be gathered on land surfaces. Cooked in ashes, yabby tails were liked by all.

YAMS. Aboriginal women dug many kinds of roots with their *Kan:An* which are sometimes called "yam-sticks" or "yam-poles".

When early colonial writers spoke of *Lubras* digging yams, one cannot be certain which roots, corms, tubers or rhizomes they meant. In some cases they had no idea.

The *Mirrn:Ong* became well known because it is ubiquitous in southern Victoria; also because as early as 1841, natives living in the vicinity of the colony of Melbourne complained that the foreign stock had eaten out the *Mirrn:Ong* crop on which the clans people depended for sustenance.

Bitter in the winter, the new corms produced in spring were as sweet as nuts.

During the winter, the foragers from the Jerringot mound sought for bracken and blushing bindweed (a creeping convolvulus) as a substitute for the daisy yam.

□

Various items
. . . Dick Southcombe

Environmental Monitoring

Alan Reid of the Gould League is designing an environmental monitoring techniques handbook and seeks our help in providing appropriate simple techniques. Descriptions of techniques which members use and feel may be helpful to Alan should be given to Barry Lingham.

See the noticeboard at the February and March meetings.

GFNC Program 1997/98.

The suggestions made by members regarding future speakers, subjects, excursions and campouts at our December meeting were most helpful and appreciated.

We now need a schedule of each special interest group's meetings and activities commencing June 1997 through to May 1998.

Leaders are asked to give their completed schedules to Joe Hubbard or me

by February 28th.

Botanic Guardians

At long last we have completed arrangements with DNR&E to carry out another Botanic Guardians project at the Inverleigh and Bannockburn cemetries. The Plant group will survey the plants on a seasonal basis and invite members with other interests to join us so that a more comprehensive report can be presented to the department at the end of 1997.

Please let me know if you would like to take part and we will give you notice of our outings.

□

G.F.N.C. AND COMMUNITY INVOLVEMENT.

.....Dennis Greenwell

As you know, the Club has been involved in Waterwatch since July 1995 and this past year has been particularly productive.

Les Barrow, Ade Foster and myself have been monitoring the water quality at Jerringot and we are now testing both North and South of the Golf Course Access Road, to compare the differences between these two wetlands.

Rachel Keary has been working tirelessly on behalf of Torquay Landcare Group and I have reproduced (with permission of Barwon Water) a portion of the December edition of "Watch Out" which acknowledges this work.

"*In particular I would like to make special mention of a number of community groups and individuals who have made outstanding contributions to Waterwatch this year. Rachel Keary from the Torquay Landcare Group has been sensational this year monitoring at six sites along Thomson Creek for both physical and chemical parameters and macro-invertebrates. Rachel has attended all training and community meetings and sent all her quality results in.*

The results produced by Rachel have provided the Thomson Creek Catchment Committee with invaluable baseline data for the Catchment strategy being produced during 1997."

In the 1996 Waterwatch Awards, Rachel received awards for most outstanding individual and most number of monitoring results and

G.F.N.C. received a quality control award.

On 24th October last, a number of Club Members were involved with Barwon Water's River Adventure Day. Valda Dedman and Dave King, together with Priscilla and Trevor Pescott, took to canoes at Ceres Bridge with a score or more young people from a number of local schools. From there, they made their way downstream to Baum's Weir, during which time they were able to give much valuable information on the flora and fauna of the region.

Meanwhile Claire McCormick and myself, were walking upstream from Zillah Crawcour Park doing the same thing with the entire Fyansford School. We were pleasantly surprised at the depth of knowledge of the environment that even some of the very young ones had.

□

REDWOODS

California's redwoods are as endangered as they are majestic. The ancient giants, many mere saplings around the time of Christ, once spanned 2-million acres, but 95 percent of the primeval forest is gone and the rest, not already in state parks, is at risk of being logged within a few years.

So it is hard not to view with relief and celebration the recent announcement of a deal to set aside 3,425 acres of virgin redwoods in northwest California. the tentative deal - under which owner Pacific Lumber Company would turn over a total of 7,500 acres of redwoods and buffer in exchange for land and cash worth US$380 million - culminates a decade-long struggle and marks the first agreement to preserve any part of the ancient Headwaters forest.

Environmentalists, who had pushed to set aside 60,000 acres, are outraged that four of the six largest stands in the forest are still left vulnerable to logging. The company still has 207,000 acres on which to operate.

Extracted from "St.Petersburg Times" Florida, USA. 23-9-96.

□

MELALEUCA

Four insects are being touted as the last lines of defence against an Australian tree that is gobbling up Florida's River of Grass.

Workers wading into marshes with chain saws have failed to repel a massive invasion of punk trees in the Everglades. Tree poisons have merely stemmed their advance.

Now, the most effective weapon yet against an Australian tree that has swallowed half a million acres of South Florida wetlands may be in a local laboratory.

The South Florida Water Management District officials have been ready and waiting for six months for federal approval to release the melaleuca weevil, *Oxyops vitiosa*, into the Everglades.

The trees have been a disaster for the Everglades and threaten to turn the River of Grass into an impenetrable forest.

They were brought from Australia in the early 1900's as ornamental trees and South Florida farmers helped spread them into the marshes by planting them as windbreaks. Then in the 1930's someone took seeds out by airplane and spread them over the Everglades. Now, they are in such thick stands that a person cannot walk through them.

The area proved to be a near-perfect home. The tree faces no natural pests and almost no competition from other trees. It flourishes in wetlands and benefits from fires.

For four years, workers sometimes in helicopters and airboats including sugar cane cutters have been hacking and poisoning the tree, yet although they have removed about 1.5 million trees, 40 percent of the area is still infested with them.

A U.S. Fish and Wildlife Service biologist is questioning the safeguards in the Australian weevil plan and Washington is currently trying to decide whether or not to give the program approval.

Edited extract from *St Petersburg Times*, by Staff Writer David Olinger. Florida, U.S.A.

□

BIRDS OF THE PORTARLINGTON SEWAGE TREATMENT PLANT

By Dave King

Introduction

The writer gave a talk to the G.F.N.C. Bird Group some time ago on the subject of the R.A.O.U. Victorian Group Wetland Survey as it applied to the Portarlington Sewage Treatment Plant. It was suggested at the time that the contents of the talk should form the basis for publishing an article. This article is the result of that suggestion.

The Wetlands Survey was conducted throughout Victoria, by many volunteers, for a period of five years. The subject Plant being one of the venues.chosen by the writer. Reasons for making this choice were that the method of sewage treatment and disposal was relatively new to the Geelong area, and being newly commissioned it would perhaps provide some interesting data.

Surveys were conducted at intervals of three months. Not only the respective number of waterfowl, but every species of bird found within the lagoons area, was recorded together with their number.

Site Description

The Treatment Plant , established in 1982, caters for the sewage discharge from properties in the north-eastern sector of the Bellarine Peninsula, covering the townships of Portarlington, Indented Heads and St. Leonards. The Plant is situated on Grassy Point Road, at a point some three kilometres south of Port Phillip Bay.

Four lagoons have been constructed, two are facultative lagoons each 10.5ha in area, and two storage lagoons each 3.35ha in area, making a total lagoon area of 27.7ha, all at a working depth of 2.8m. Each lagoon is surrounded by a levee bank. Along side the outer levees are small wetlands composed mainly of drainage channels.

Sewage effluent arriving at the Plant, via pipes and pumping stations, enters the facultative lagoons where it remains for a period of 200-300 days, allowing it to undergo natural biological processes that break it down into a non-toxic and harmless aquatic product. After this the effluent is passed to the storage lagoons where it remains for a period of up to six months before being used for irrigation.

Total area of the Plant Complex is 130ha, of which most will consist of tree plantations irrigated by sprinklers supplied from the the storage lagoons via pumps and a reticulation system. The trees, of which around 100,000 are currently planted, consist of Blue Gum, Flooded Gum and Casuarinas.

Irrigation is normally carried out from November to April unless an unusually dry season is experienced.

Methods

Survey procedure was to traverse the levee banks avoiding, as far as possible, disturbance of birds both on the lagoon or resting on the levee bank. Lack of odour from the lagoons makes it quite acceptable to occasionally sit on the levee whilst observing and counting birds. Binoculars are essential, as distance across the lagoons makes unaided sighting difficult.

Total number of each species was recorded, including those in the air, if it was obvious that they made use of the area or intended to do so. All records were placed in a data base, which included the computed biomass.

Results

The most significant species in terms of number were:-

Hoary-headed Grebe
Black Swan
Australian Shelduck
Chestnut Teal
Musk Duck
Eurasian Coot

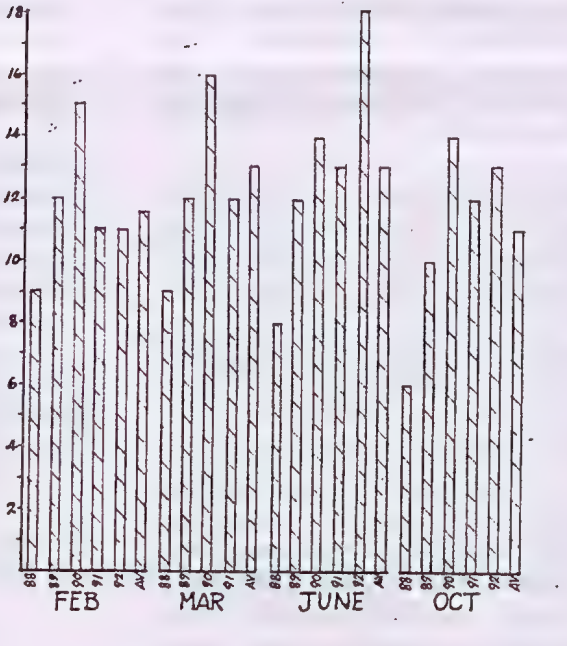

Fig 1 No. of species

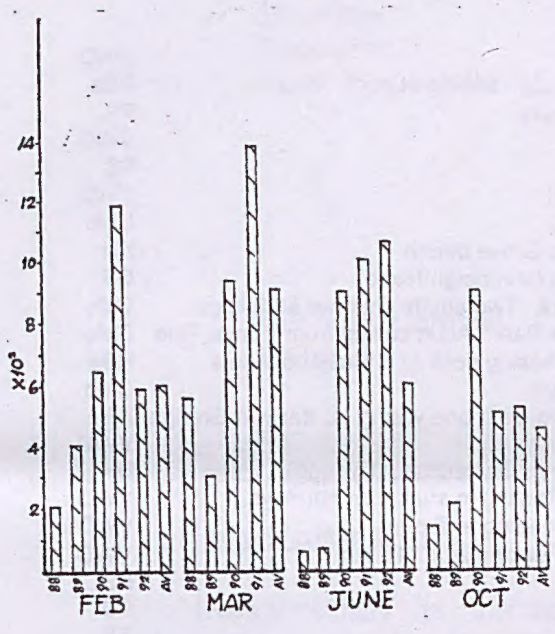

Fig 2 No. of birds

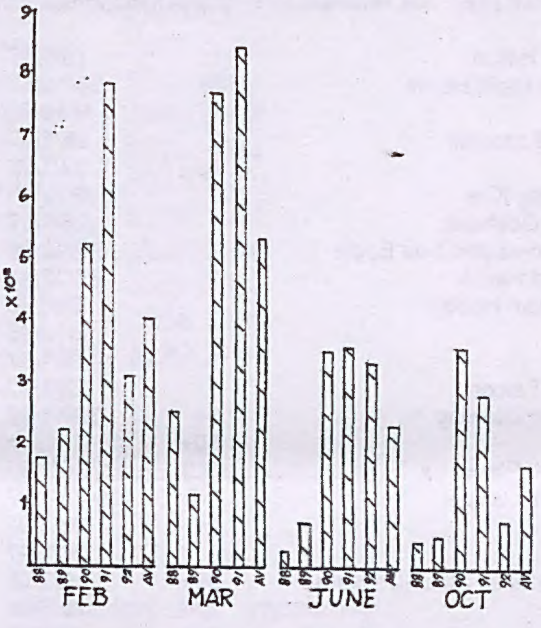

Fig 3 Biomass (kg)

Discussion

Number of species as an average for each quarterly survey (Fig.1) varied little over the five year period of the survey. The lower numbers in the year 1988 was most probably due to the relative newness of the facility; it not having yet matured sufficiently and not having become familiar to populations of birds that move regularly with the seasons.

Total numbers of birds present at any one time was more variable, peaking in each March survey (Fig. 2), due no doubt to the drying-out of many wetlands over the summer and early autumn.

The year 1989 showed low numbers throughout all four quarters. This most probably due to climatic conditions prevailing over a wide area of the continent. In addition, during the course of 1989, the biomass steadily decreased. This appeared caused mainly by Black Swan numbers declining over that period, probably resulting from better food and breeding prospects elsewhere.

Influence in both number and biomass (Figs. 2 &3) in the late summer through autumn is characterised by Australian Shelduck. It appears to coincide with an extensive pre-nuptial moult (Frith, 1977), the lagoons affording a safe haven from terrestrial predators.

The species listed as significant have as their diet, vegetation, small fish, frogs and various invertebrates (Pizzey, 1985). As no emergent vegetation is available in the lagoons it must be assumed that algae and aquatic animals figure largely in their diet, supplemented with grasses etc. grazed from the surrounding areas.

Acknowledgments

The writer is grateful to Barwon Water for allowing unrestricted access to the Plant over the period of survey, and in particular to the personnel at the Plant, who readily provided information on their observations.

Technical data regarding the Plant was taken from the pamphlet published by Barwon Water, which is freely available at all their offices.

David Nicolls of the RAOU is thanked for providing computer print-outs of the survey results.

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□

BIRD OBSERVATION REPORTS Dec'96 - Jan '97 -- *compiled by Barry Lingham.*

Observations were submitted by Ray Baverstock (RBa), Grant Baverstock (GB), Jocelyn Calvert (JCa), Valda Dedman (VWD), Jim Dedman (JD), Craig Morley (CMo), Barry Lingham (BL), John Bottomley (JB), Robert Preston (RP). Penny Smith (PS), Brian Hart (BH) Joe Hubbard (JH), Claire McCormick (CMc)

Pacific Heron	1	15/1/97	Jerringot	VWD
Rufous Night Heron	7+	26/12/96	Buckley's Falls - fishing at pool	RBa
	1	9/10/96	Buckley's Falls	PS
Royal Spoonbill	2	26/1/97	Jerringot	VWD
	50	22/7/96	Swan Bay	PS
Whistling Kite	1	16/12/96	Pollocksford	VWD
Brown Goshawk	1	28/1/97	Newtown	CMo
White-breasted Sea Eagle	1	4/12/96	Over Ocean Grove beach	BH
Spotted Harrier	1	26/12/96	Stonehaven (Inverleigh Road)	GB
Australian Hobby	4	Dec 96	Eastern Park. Two adults plus two fledglings	CMo
	1	2/12/96	Johnstone's Park. Adult calling from Bunya Pine	CMo
	1	12/1/97	Highton - Chasing flock of 5 Musk Lorikeets	RBa
Brown Falcon	1	23/1/97	Queen's Park	CMo
Masked Lapwing	3+	30/11/96	Newtown. At least one young at Barwon Grange	RBa
	50+	Jan	Jerringot	VWD
Hooded Plover	3	15/1/97	Buckle's Park, Collendina (1 young)	BH
Latham's Snipe	1-5	15-28/1/97	Jerringot. Resting in shade on hot days.	VWD
	1+	26/1/97	Jerringot Feeding at 7 p.m.	VWD
	1	28/1/97	Jerringot. Feeding at 11:15 a.m.	VWD
Yellow-tailed Black-Cockatoo	35+	15/7/96	Highton	PS
	35+	30/7/96	Highton	PS
	40+	7/12/96	Highton	PS
	10	6/10/96	Ceres	PS
	7	28/1/97	Highton	PS
	2	Dec 96	Pollocksford	VWD
	2	5/12/96	Ocean Grove Nature Reserve	BH
Sulphur Crested Cockatoo	1	24/1/97	Newtown. Eating Crab Apples.	CMo
Rainbow Lorikeet	9	27/1/97	Newtown	CMo
	6	20/12/96	Highton	RBa
Musk Lorikeet	20+	25/12/96	Highton. Feeding in gum tree all days until20/1/97	RBa
Purple-crowned Lorikeet	2-4	Jan 97	Newtown	CMo
Little Lorikeet	2+	23/1/97	Queen's Park	CMo
Tawny Frogmouth	4	14/12/96	Highton. Two plus two young.	RBa
	1	17/1/97	Pollocksford	JD
White-throated Needletail	25+	26/1/97	Ocean Grove town. Hawking low over trees.	BL
	80+	27/1/97	Belmont	CMc
Black-faced Cuckoo-shrike	2+2	1/12/96	Limeburner's Bay. Nest and 2 nestlings.	JH
Blackbird	1	23/12/96	North Valley Road. Nest and 3 young in garage	VWD
Song Thrush	2	25/1/97	Newtown. 2 juveniles in backyard.	CMo
	1	22/12/96	Highton, garden.	PS
	1	29/12/96	Highton, garden.	PS
Eastern Yellow Robin	1	7/1/97	Botanical Gardens, Geelong.	JH
Rufous Fantail	1	3/12/96	Ocean Grove Nature Reserve	BH
Yellow Thornbill	3+	4/1/97	Highton	RBa
Singing Honeyeater	4+	16/1/97	Barwon Heads	RBa
White-plumed Honeyeater	1-2	8-28/1/97	Newtown. Extended length of stay.	CMo
Spotted Pardalote	1	20/12/96	North Valley Road	VWD
Striated Pardalote	1	26-27/1/97	Newtown (heard)	CMo
Silvereye	4+	14/1/97+	Newtown. Dependent flying young with adults.	CMo
	2	Jan 97	Belmont. Running food relays to nest out of sight.	RP
European Goldfinch	1+	13/12/96	Geel. West. Feeding nestlings in flowering gum.	CMo
European Greenfinch	1	25-27/1/97	Belmont. Cuckoo like call	CMc
	1	26/1/97	North Valley Road	VWD
Diamond Firetail	2	1/1/97	You Yangs	JH
Common Mynah	1	15/1/97	Hamilton Hwy (Stonehaven) eating dead rabbit	VWD
White-browed Woodswallow	50+	15/12/96	Newtown	CMo
Grey Butcherbird	3+	9-12/1/97	Highton, in garden for several days.	RBa
	?	8/12/96	Highton, calling.	VWD
Australian Magpie	1	20/12/96	Anakie. Spread-eagled on ground for 10 mins.	JB/JCa
Pied Currawong	2	26/28/1/97	North Valley Road, calling all day	VWD
	1	23/1/97	Queens park, harassed by 4-5 magpies	CMo

Brian Hart noticed the Sea Eagle over Ocean Grove but there are rumours of a nest towards Torquay. It is interesting to note the report of the Spotted Harrier so close to Geelong by Grant Baverstock. Valda has been noting the feeding habits of Latham's Snipe - they are generally thought to move away from Jerringot at night to feed, so these are significant sightings.

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GEELONG FIELD NATURALISTS CLUB Inc.
PO Box 1047
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Printed by Ken Jenkin.

GEELONG NATURALIST

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